

WHAT IS CLAIMED

1. A method for limiting the DC voltage applied to a tip/ring amplifier of a subscriber line interface circuit (SLIC) comprising the steps of:

(a) coupling a first polarity input of said tip/ring amplifier to a first current flow path to which a DC input voltage is coupled;

(b) coupling a second polarity input node of said tip/ring amplifier to a second current flow path to which a current derived in accordance with that flowing through said first current flow path is coupled;

(c) regulating the voltage at said first polarity input of said tip/ring amplifier to a regulated voltage value  $V_{reg}$ , so that the magnitude of current in said second current flow path and is based upon said regulated voltage value  $V_{reg}$ , irrespective of said DC input voltage exceeding said regulated voltage value  $V_{reg}$ .

2. The method according to claim 1, wherein step (b) further includes deriving said current coupled to said second current flow path by way of a low pass filter that passes DC supply energy and prevents noise from being introduced into the voice path of said tip/ring amplifier.

3. The method according to claim 1, wherein said first current flow path comprises a voltage divider to

an input terminal of which said DC input voltage is applied, and to a voltage dividing node of which said  
5 first polarity input of said tip/ring amplifier is coupled, and wherein step (c) comprises regulating the voltage at said input terminal of said voltage divider.

4. The method according to claim 3, wherein step (b) comprises coupling to said second current flow path a current derived in accordance with that flowing through said voltage divider between said voltage  
5 dividing node and a reference node.

5. The method according to claim 1, wherein said first current flow path comprises a voltage divider to an input terminal of which said DC input voltage is applied, and to a voltage dividing node of which said  
5 first polarity input of said tip/ring amplifier is coupled, and wherein step (c) comprises regulating the voltage at said voltage dividing node of said voltage divider.

6. The method according to claim 5, wherein step (b) comprises coupling to said second current flow path a current derived in accordance with that flowing through said voltage divider between said voltage  
5 dividing node and a reference node.

7. The method according to claim 6, wherein step (b) further includes deriving said current coupled to

5 said second current flow path by way of a low pass filter that passes DC supply energy and prevents noise from being introduced into the voice path of said tip/ring amplifier.

8. A circuit arrangement for limiting the DC voltage applied to a tip/ring amplifier of a subscriber line interface circuit (SLIC), having a first polarity input thereof coupled to a first current flow path to  
5 which a DC input voltage is coupled, said circuit arrangement comprising:

10 a current source that is operative to supply, to a second polarity input node of said tip/ring amplifier, a current derived in accordance with that flowing through said first current flow path; and

15 a voltage regulator coupled with said first current flow path and being operative to regulate the voltage at said first polarity input of said tip/ring amplifier to a regulated voltage value  $V_{reg}$ , so that the magnitude of current supplied by said current source is based upon said regulated voltage value  $V_{reg}$ , irrespective of said DC input voltage exceeding said regulated voltage value  $V_{reg}$ .

9. The circuit arrangement according to claim 8,  
further including a low pass filter coupled with said current source and being operative to pass DC supply energy and prevent noise from being introduced into the  
5 voice path of said tip/ring amplifier.

10. The circuit arrangement according to claim 8,  
wherein said first current flow path comprises a voltage  
divider to an input terminal of which said DC input  
voltage is applied, and to a voltage dividing node of  
5 which said first polarity input of said tip/ring  
amplifier is coupled, and wherein said voltage regulator  
is coupled to said input terminal of said voltage  
divider.

11. The circuit arrangement according to claim 10,  
wherein said current source is operative to supply said  
current in accordance with that flowing through said  
voltage divider between said voltage dividing node and a  
5 reference node.

12. The circuit arrangement according to claim 8,  
wherein said first current flow path comprises a voltage  
divider to an input terminal of which said DC input  
voltage is applied, and to a voltage dividing node of  
5 which said first polarity input of said tip/ring  
amplifier is coupled, and wherein said voltage regulator  
is coupled to said voltage dividing node of said voltage  
divider.

13. The circuit arrangement according to claim 12,  
wherein said current source is operative to supply said  
current in accordance with that flowing through said  
voltage divider between said voltage dividing node and a  
5 reference node.

14. The circuit arrangement according to claim 13,  
further including a low pass filter coupled with said  
current source and being operative to pass DC supply  
energy and prevent noise from being introduced into the  
5 voice path of said tip/ring amplifier.

15. A circuit arrangement for limiting the DC  
voltage applied to a tip and ring amplifiers of a  
subscriber line interface circuit (SLIC), each having a  
first polarity input thereof coupled to a first current  
5 flow path to which a DC input voltage is coupled, said  
circuit arrangement comprising:

a first current source that is operative to supply,  
to a second polarity input node of said tip amplifier, a  
first current derived in accordance with that flowing  
10 through said first current flow path;

a second current source that is operative to  
supply, to a second polarity input node of said ring  
amplifier, a second current derived in accordance with  
that flowing through said first current flow path; and

15 a voltage regulator coupled with said first current  
flow path and being operative to regulate the voltage at  
said first polarity input of said tip/ring amplifier to  
a regulated voltage value  $V_{reg}$ , so that the magnitudes  
of said first and second currents supplied by said first  
20 and second current sources, respectively, are based upon  
said regulated voltage value  $V_{reg}$ , irrespective of said  
DC input voltage exceeding said regulated voltage value  
 $V_{reg}$ .

16. The circuit arrangement according to claim 15,  
further including first and second low pass filters  
respectively coupled with said first and second current  
sources and being operative to pass DC supply energy and  
5 prevent noise from being introduced into the voice paths  
of said tip and ring amplifiers.

17. The circuit arrangement according to claim 15,  
wherein said first current flow path comprises a voltage  
divider to an input terminal of which said DC input  
voltage is applied, and to a voltage dividing node of  
5 which said first polarity inputs of said tip and ring  
amplifiers are coupled, and wherein said voltage  
regulator is coupled to said input terminal of said  
voltage divider.

18. The circuit arrangement according to claim 17,  
wherein said first and second current sources are  
operative to supply said first and second currents in  
accordance with that flowing through said voltage  
5 divider between said voltage dividing node and a  
reference node.

19. The circuit arrangement according to claim 15,  
wherein said first current flow path comprises a voltage  
divider to an input terminal of which said DC input  
voltage is applied, and to a voltage dividing node of  
5 which said first polarity inputs of said tip and ring  
amplifiers are coupled, and wherein said voltage

regulator is coupled to said voltage dividing node of  
said voltage divider.

20. The circuit arrangement according to claim 19,  
wherein first and second current sources are operative  
to supply said first and second currents in accordance  
with that flowing through said voltage divider between  
5 said voltage dividing node and a reference node.

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